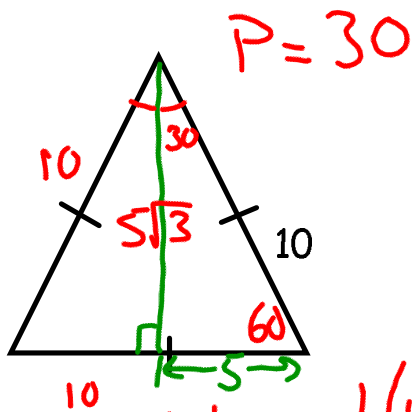


04/07/14 Agenda:

- Review Homework
 - Worksheet 4 - Area of Trapezoids
 - Worksheet 5 - Review Days 1-4
- Section 11.6 - Areas of Regular Polygons
- Homework
 - Worksheet 6 - Area of Regular Polygons

Warm Up - Get Your Homework Out!

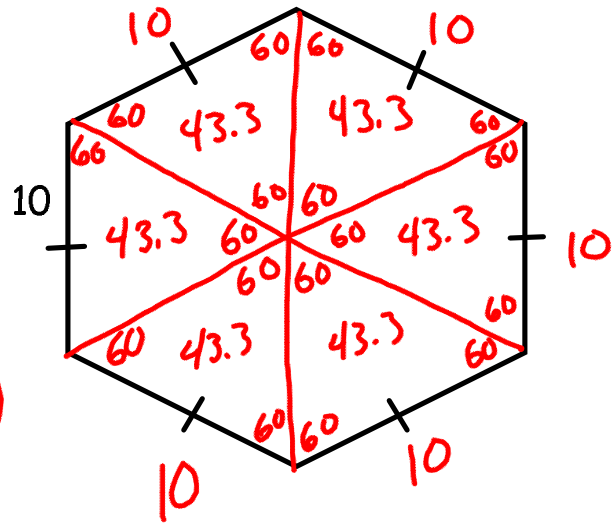
Find the area of the figures:



$$A = \frac{1}{2}bh = \frac{1}{2}(10)(5\sqrt{3})$$

$$A = \frac{5^2\sqrt{3}}{4}$$

$$\boxed{25\sqrt{3}} \\ \boxed{43.30^2}$$



$$A_0 = 6 \cdot 43.3 \\ 259.8$$

Section 11.6 - Areas of Regular Polygons

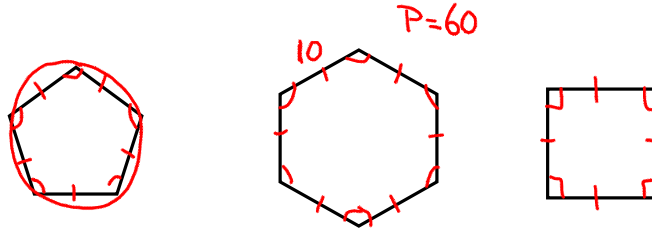
Target 11H

April 7, 2014

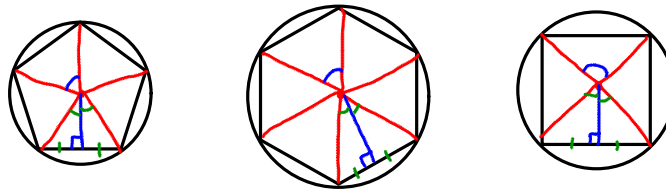
Goal: Find the Area & Perimeter of a Regular Polygon.

Regular Polygon:

A polygon in which ALL sides and ALL angles are congruent.



If we circumscribe a circle around a regular polygon:



Center of a Regular Polygon:

The center of the polygon's circumscribed circle.

Radius of a Regular Polygon:

The radius of the polygon's circumscribed circle.

Apothem of a Regular Polygon:

The shortest distance from the center to a side of the polygon. The apothem is perpendicular to the side.

Central Angle of a Regular Polygon:

An angle formed by two radii drawn to consecutive vertices of the polygon. To find the measure of a central angle, divide 360° by the number of sides.

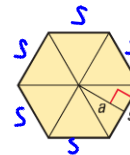
THEOREM

For Your Notebook

THEOREM 11.11 Area of a Regular Polygon

The area of a regular n -gon with side length s is one half the product of the apothem a and the perimeter P ,

so $A = \frac{1}{2}aP$, or $A = \frac{1}{2}a \cdot ns$.



$$A = \frac{1}{2} a \cdot s \cdot n$$

$$P = n \cdot s$$

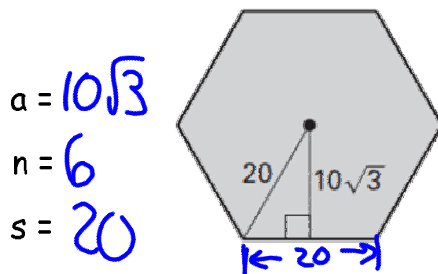
Section 11.6 - Areas of Regular Polygons

Target 11H

April 7, 2014

$$A_{\text{Regular Polygon}} = \frac{1}{2}aP, \text{ or } = \frac{1}{2}a \cdot ns$$

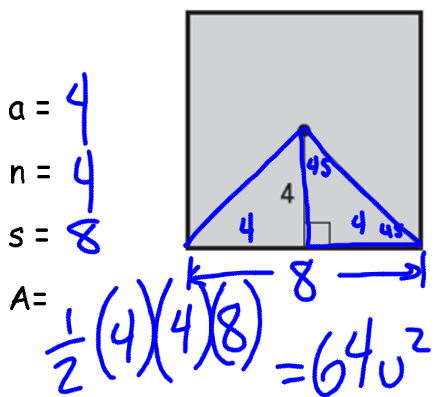
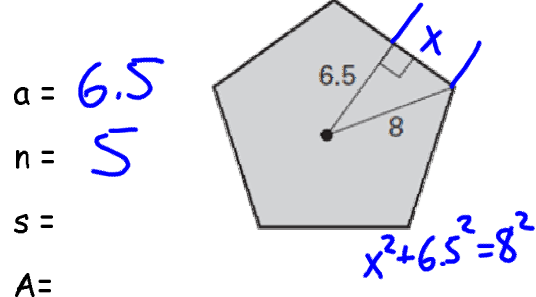
Find the area of each regular polygon:



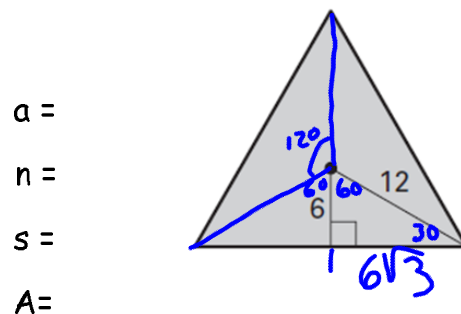
$$\frac{1}{2}(10\sqrt{3})(6)(20)$$

$$(5\sqrt{3})(120)$$

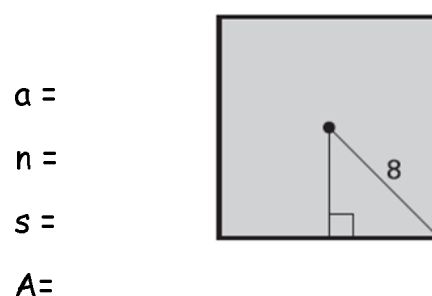
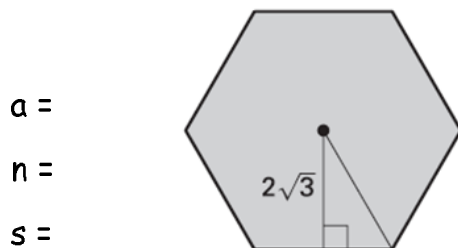
$$(600\sqrt{3}) = 1039 \text{ u}^2$$



$$\frac{1}{2}(4)(4)(8) = 64 \text{ u}^2$$



You try:



Unit 10 - Summary

Review/Summary:

Perimeter: The total distance around an object.

Area: The total number of square units inside an object.

$$A_{\text{Square}} = s^2 \text{ or } b \cdot h$$

$$A_{\text{Triangle}} = \frac{1}{2} \cdot b \cdot h$$

$$A_{\text{Parallelogram}} = b \cdot h$$

$$A_{\text{Equilateral Triangle}} = \frac{s^2 \sqrt{3}}{4}$$

$$A_{\text{Rectangle}} = b \cdot h$$

$$A_{\text{Kite}} = \frac{1}{2} \cdot d_1 \cdot d_2$$

$$A_{\text{Trapezoid}} = \frac{1}{2} \cdot h \cdot (b_1 + b_2)$$

$$A_{\text{Rhombus}} = \frac{1}{2} \cdot d_1 \cdot d_2 \text{ or } b \cdot h$$

$$A_{\text{Regular Polygon}} = \frac{1}{2} aP, \text{ or } = \frac{1}{2} a \cdot ns$$

